West Coast Groundfish in California Value Chain Assessment

SUMMARY OF FINDINGS AND RECOMMENDATIONS

PREPARED WITH SUPPORT FROM:
THE DAVID AND LUCILE PACKARD FOUNDATION

PREPARED BY:
WILDERNESS MARKETS
OCTOBER 2015

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DISCLAIMER

GRATEFUL THANKS

Project Advisory Group

We deeply appreciate the time and knowledge shared with us by the project advisory group. Their guidance in this evolving work was invaluable.

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Sustainability matters. Fishermen understand that if they overfish, there will be no more fish to catch. Consumers understand that protecting our oceans is important, and therefore buying sustainably harvested seafood is the right thing to do—if they can find it. The West Coast Groundfish fishery in California is one of the most complex U.S. fisheries to successfully implement management practices designed in collaboration with managers and harvesters that have resulted in a biological rebound over a wide geographic area.

However, despite this progress toward protecting the fish, the long-term economic stability of groundfish harvesters is uncertain. Why is this, when this fishery has made so much progress?

The Packard Foundation provided a grant to Wilderness Markets to find the answer. Using a USAID Value Chain approach, we evaluated the value chain in California in order to identify constraints and opportunities that could be addressed to improve the financial viability of harvesters and to attract impact investment capital—thus ensuring the long-term economic sustainability of the fishery at all levels.

WHY FOCUS ON GROUNDFISH IN CALIFORNIA?

The generic term "groundfish" refers to fish that, with a few exceptions, live on or near the bottom of the ocean— as opposed to migratory species or invertebrates. For the purpose of assessing the California groundfish fishery, groundfish includes more than 90 species, including Dover sole, thornyheads and sablefish (called the DTS complex), as well as petrale sole. This project was undertaken to determine why many of the fishermen in the groundfish fleet are still struggling economically — despite the fact the health of the stocks they are accessing have improved. Understanding what is happening in the groundfish fishery is an important step toward addressing long-term economic sustainability in fisheries worldwide. The scope of this analysis was refined to California as a means to allow for an in-depth analysis, particularly given the number of species in the fishery that were to be reviewed.

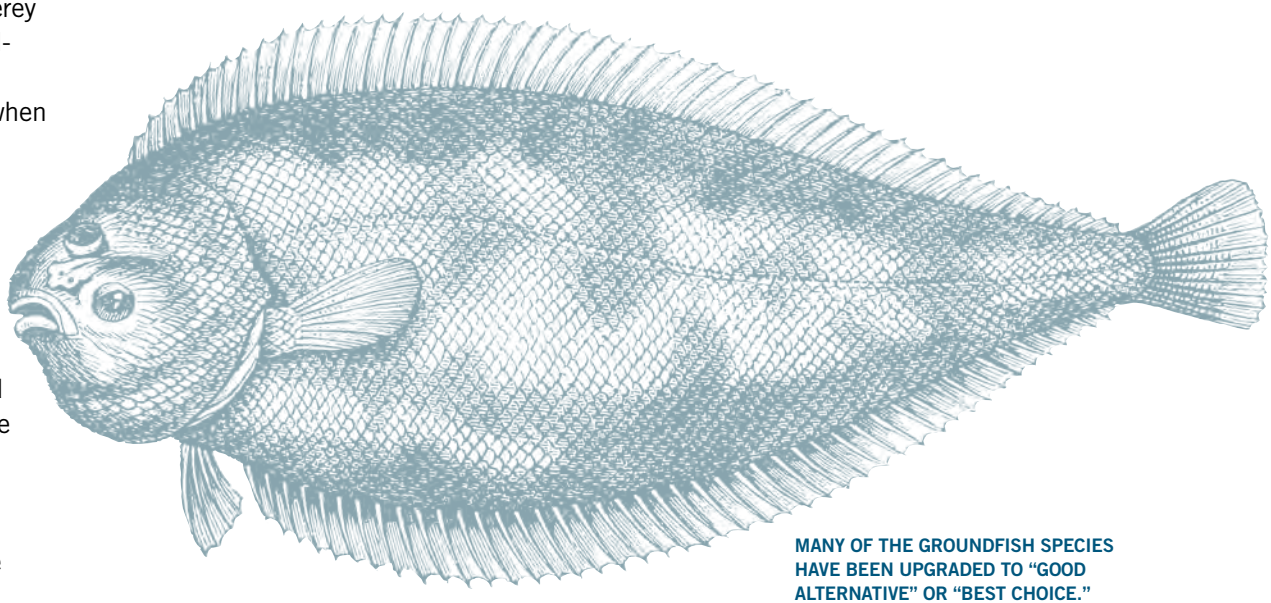
Currently, harvesters in the IFQ fishery bear significant management costs associated with delivering positive conservation outcomes. Therefore, our recommendations focus on how best to improve the economics of IFQ harvesters to sustain the continued long-term growth of this fishery. While this research focused on groundfish, it is important to note that most harvesters usually fish a portfolio that includes crab, squid, shrimp, urchins, and others. This portfolio approach helps mitigate the inherent risk of relying on any single wild resource.

California Groundfish: A Biological Sustainability Success Story

The West Coast groundfish fishery in California is a management success. Of the 90 plus species managed by the Pacific Coast Groundfish Fishery Management Plan, the management council currently considers only five overfished, and classifies each of these species as "rebuilding." In 2014, the Marine Stewardship Council (MSC) certified 13 trawl-caught species and the Monterey Bay Aquarium's Seafood Watch program rated 21 trawl-caught species "Green, Best Choice" or "Yellow, Good Alternative."[1] This is a significant change from 2000 when the National Oceanic and Atmospheric Administration (NOAA) declared the fishery a national disaster.

This ecological and management success did not happen in a vacuum, or overnight. A legally mandated, scientifically informed and enforced quota system provided the basis for effective management and sustainable harvests. Today, the fishery has established and implemented the three Key Enablers of sustainable and profitable fisheries: secure tenure; sustainable harvests; and robust monitoring and enforcement.[2]

Successful implementation of several federal and state policies is responsible for bringing the fishery back from disaster.The MSC and the Seafood Watch program recognition potentially presents a unique opportunity to differentiate these groundfish in North American markets from the large volume of imported, often unsustainably sourced fish.



MANY OF THE GROUNDFISH SPECIES HAVE BEEN UPGRADED TO "GOOD ALTERNATIVE" OR "BEST CHOICE."

1 *Huge improvement in Seafood Watch Rankings for Key West Coast Fisheries.* Retrieved September 25 2015 from https://newsroom.montereybayaquarium.org/press/huge-improvement-in-seafood-watch-rankings-for-key-west-coast-fisheries

2 Holmes, L., Strauss, C. K., de Vos, K., & Bonzon, K. (2014). *Towards investment in sustainable fisheries: A framework for financing the transition.* Environmental Defense Fund and The Prince of Wales's International Sustainability Unit. Retrieved from http://www.50in10.org/wp-content/uploads/2014/07/fisheries_handbook.pdf

The Economic Challenge: Constraints

Despite this significant ecological progress, fishing and conservation communities continue to share concern about the long-term economic sustainability of the fishery, particularly as the fishermen continue to bear management costs that have increased over the past 5 years. Our assessment identified a number of operational inefficiencies in the value chain that are hurdles to increasing the market value of seafood from this fishery; as long as the product is undervalued, the fisherman will struggle economically.

West Coast groundfish competes with large volumes of imported products, which depresses prices. Differentiating product based on demand characteristics should improve the pricing, but very little data exists around the nature of the end market demand—do domestic or international consumers know when they are buying sustainable groundfish and does that influence their buying choices? Practitioners in this fishery, as well as supporting actors, will need to answer this question in order to overcome this and other constraints if they are to improve the financial value of the fishery and ensure that the benefits of improved environmental stewardship flow to harvesters.

This research revealed the following key constraints continuing to prevent West Coast groundfish harvesters in California from achieving long-term economic stability, particularly in the trawl sector:

- **Access to adequate quantities of suitable quota.** Harvesters report that setting business strategy is complicated by fishery management not aligning quota release with fishing seasons and not communicating near-term future quota allocations.
- **Increased and relatively high management costs.** Not all harvesters accessing groundfish bear the cost of management. Observer costs alone may be as much as nearly 25% of revenues for some IFQ harvesters once observer subsidies are phased out, likely in 2016.[3]
- **Operational inefficiencies in shoreside facilities that impede market access.** Some harvesters report that they can't access facilities, such as hoists and wharfs, with appropriate capacity at their home ports unless they go through a processor, effectively limiting their ability to access markets.

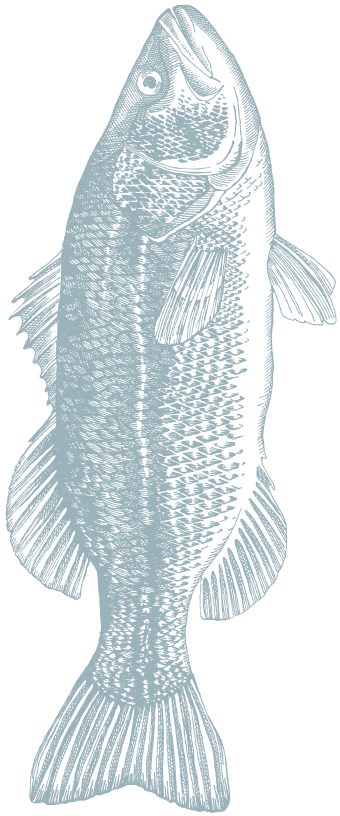
3 CapLog. (2012). *Economic Model and Summary of Monitoring Concepts for the West Coast groundfish IFQ Program.* Retrieved from http://www.morrobaycommunityquotafund.org/wp-content/uploads/2012/11/white-paper-on-monitoring.pdf; NOAA. (November 2015). 2015 Update for the West Coast Catch Shares Program. Retrieved November 25, 2015 from http://www.westcoast.fisheries.noaa.gov/mediacenter/2015_west_coast_catch_shares_program_update_and_economic_data_collection_insert.pdf

- **Undifferentiated product with low market value competing with low value imports.** Much of the high-volume trawl caught species compete with low-cost imports on the commodity market. Buyers can easily substitute imports from unsustainable fisheries because the IFQ fish doesn't get differentiated in the marketplace.
- **Lack of transparent quota lease and lienholder registration mechanisms.** Interviewed financial institutions reported a concern with the inability to cost effectively track quota owners, leases and lien holders under the current management system, thus increasing perceived risk associated with this market.

As a primary step in further quantifying the impact and understanding the scope of these constraints, we recommend addressing information gaps related to these challenges, including:

- Improve information flows related to quota caps and allocations to improve economic viability (balanced against biological recovery)
- Improve market segmentation and quantify market demand for species and related products in question
- Conduct a detailed shoreside port-based assessment to understand infrastructure constraints

We identified a number of additional constraints and valuable opportunities during the course of this assessment. These ranged from improving access to ice to increasing market demand for frozen products and improving the utilization of waste products. These recommendations are available in the detailed report. However, the economic and financial viability of these options is uncertain due to the lack of any market demand data associated with this value chain. Obviously, quantified market demand data is a priority.



Addressing these value chain constraints will allow stakeholders to build on the biological success of the fishery to secure long term economic success.

In 14 years, the West Coast Groundfish in California fishery went from national disaster to certified biological and management success.

Sound management practices and stakeholder collaboration led to biological sustainability of marine resources in the California groundfish value chain.

1982 — Pacific Coast Groundfish Fishery Management Plan (FMP) is implemented—manages 90+ groundfish stocks

1992 — A limited-entry program is implemented to restrict participation in this overcapitalized fishery

1996 — Magnuson-Stevens Act requires rebuilding accountability measures

2000 — NOAA determines the West Coast groundfish fishery to be a commercial fisheries failure and declares it a national disaster

2011 — With industry support and years of research, the trawl fishery—accounting for the majority of volume—is rationalized via Individual Fishing Quota (IFQ)

2014 — Marine Stewardship Council (MSC) certifies 13 West Coast trawl-caught groundfish

Monterey Bay Aquarium's Seafood Watch program rates 21 trawl-caught species "Best Choice" or "Good Alternative"

GROUNDFISH COMPRISE APPROXIMATELY 8% OF THE OVERALL COMMERCIAL LANDINGS FOR CALIFORNIA

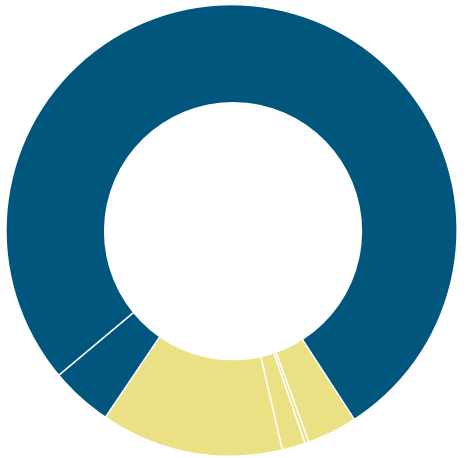
Can this fishery become economically sustainable too?

High management costs, lack of access to shoreside facilities, and undervalued product lines in the market are leading to an unsustainable economic situation for trawl fishers in this fishery.

VOLUME OF LANDINGS[1]

(Average groundfish landings, 2003-2012, excluding whiting)

Five different management sectors can legally access the West Coast groundfish stocks



Harvesters must possess IFQ to legally catch fish in the limited-entry sector.

IN 2014 OF THE 150 WEST COAST IFQ HOLDERS ONLY 20% (33) RESIDE IN CALIFORNIA.[2]

Challenges

IFQ trawl fishermen can not profitably harvest groundfish

DISPROPORTIONATELY SMALL PERCENT OF LANDINGS

California groundfish landings are less than 30% of the total West Coast groundfish landings, and IFQ species only **6% OF CALIFORNIA LANDINGS IN 2013.**[3]

WITH DISPROPORTIONATELY LOW REVENUE RETENTION[4]

In 2012, both IFQ trawl fishermen and IFQ non trawl (fixed gear) only retained between **9 – 17%** of their revenue after variable and fixed costs

Whereas the groundfish fixed gear with fixed gear endorsement retained **27%** of their revenue after fixed and variable costs

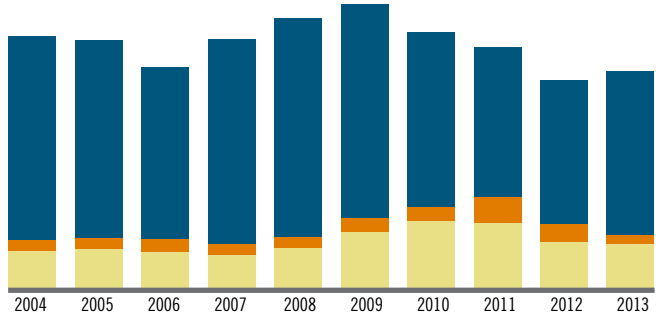
IFQ HARVESTERS MUST COVER 50% OF THEIR COST FOR ON-BOARD MONITORING (INCREASE FROM 10% SINCE 2011)[5]

On-board observer monitoring for a sample of 12 vessels, the financial burden was **1.7 TO 3.9% OF REVENUE. BUT THE COST COULD GO UP TO 24.5% OF REVENUE** if the IFQ harvesters are fully responsible for human observer monitoring costs. Electric monitoring could keep the burden at 2.3 to 6.6% of revenue.[6]

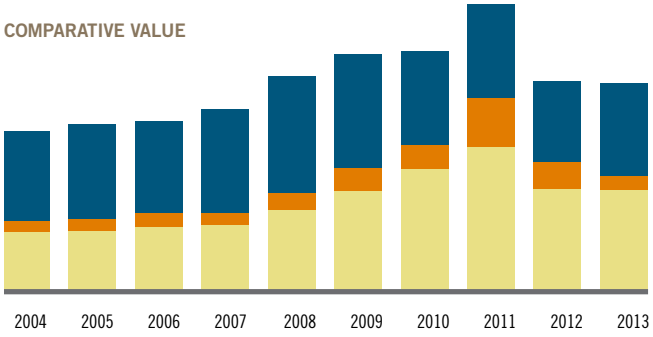
IS CALIFORNIA GROUNDFISH UNDERVALUED?[7]

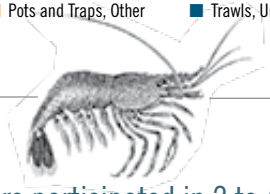
The limited data that exists shows trawler-landed groundfish enters a lower margin, commodity value chain. Harvesters using other methods—such as pots and traps—earn more per pound.

COMPARATIVE VOLUME

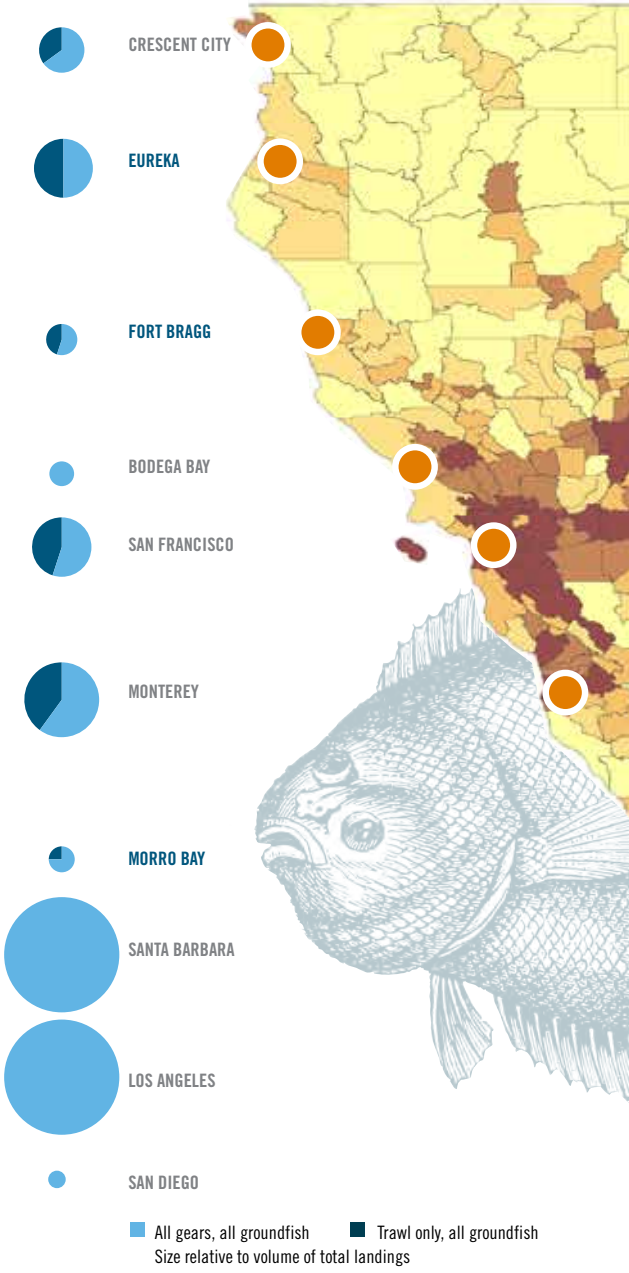


COMPARATIVE VALUE





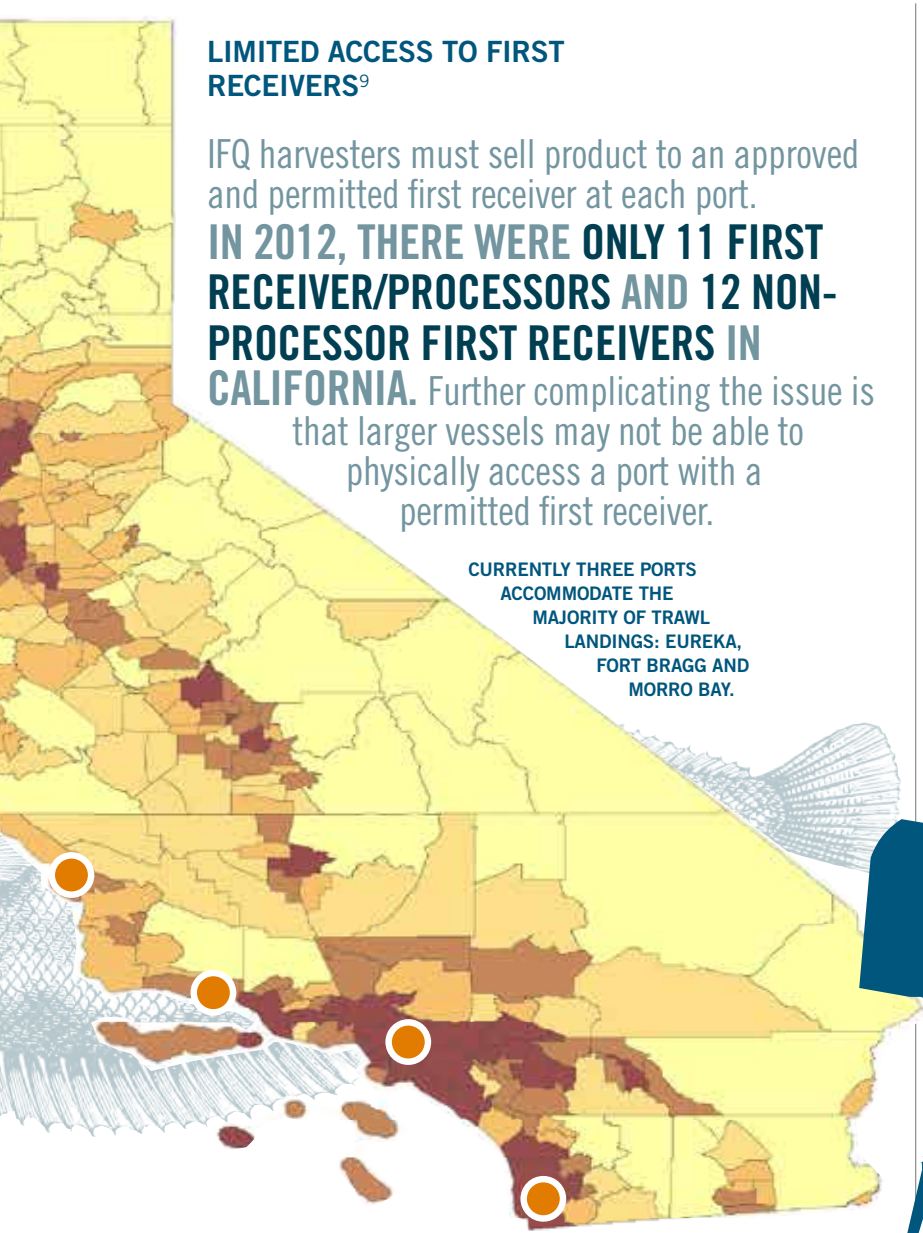
87% of IFQ fishers participated in 2 to 4 fisheries in 2012 to diversify income streams and minimize risk. For example, of the 59 West Coast trawlers fishing the Dover sole-thornyheads-sablefish complex, 40 trawlers also fish for crab, shrimp and other types of groundfish — to comprise 50% of their revenue.[8]



LIMITED ACCESS TO FIRST RECEIVERS[9]

IFQ harvesters must sell product to an approved and permitted first receiver at each port. **IN 2012, THERE WERE ONLY 11 FIRST RECEIVER/PROCESSORS AND 12 NON-PROCESSOR FIRST RECEIVERS IN CALIFORNIA.** Further complicating the issue is that larger vessels may not be able to physically access a port with a permitted first receiver.

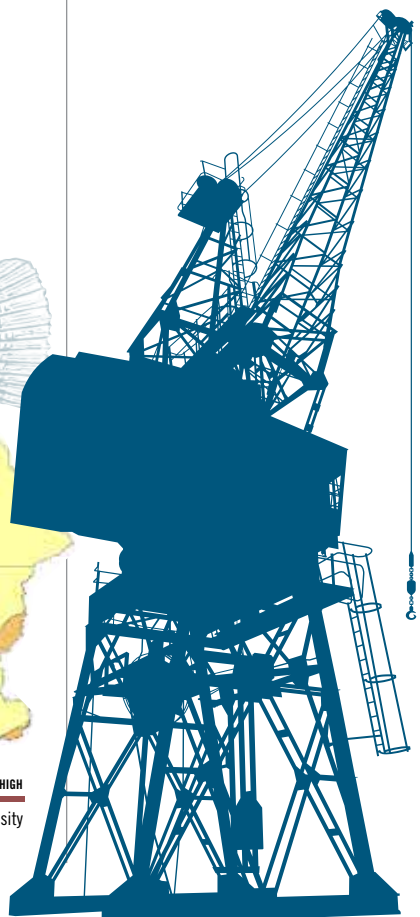
CURRENTLY THREE PORTS ACCOMMODATE THE MAJORITY OF TRAWL LANDINGS: EUREKA, FORT BRAGG AND MORRO BAY.



LIMITED ACCESS TO SHORE RESOURCES AND FACILITIES

Berths, ice, hoists, cold storage, access to first receivers, dry docking for repairs, equipment storage, and equipment repair are all important shoreside services. But not every port provides equal access to all of these services, meaning trawlers must often go out of their way to land their catch.

Lack of diversified facilities and buyers limit market options for harvesters and appear to lock them into low prices or no buyers for their products, ultimately limiting their access to markets.



PROCESSING AND DISTRIBUTION

Pacific Seafood Group reportedly controls over **50%** of the supermarket and food service markets in this region, making them a key gatekeeper for market access. Smaller processors share the remaining market. Santa Monica Seafoods has a strong niche for high quality, and increasingly sustainable, seafood in serving the restaurant market in California.

MARKET AND SPECIES DETERMINE FORM

Dover sole =
FRESH FILLET

Sablefish and petrale sole =
FRESH WHOLE (U.S.)

Other groundfish =
41% FROZEN, 30% FRESH, 25% UNPROCESSED, 4% IN OTHER FORM.

Large volumes of trawl caught ground fish need to be quickly processed and sent to market. So trawl operators need a processor and distributor with the capacity to move a large amount of fish at one time; however, if the market "accepted" frozen fillets, as seen by prices for frozen sablefish exports, they might get higher prices because value chain participants could more readily control supply.

Higher value fish is usually captured in pots and traps, and sold as whole fresh or frozen. Consequently, volumes are lower and there are fewer processing requirements. Lower landings volumes mean that there are lower infrastructure requirements therefore, **market access and infrastructure access are not as pressing.**

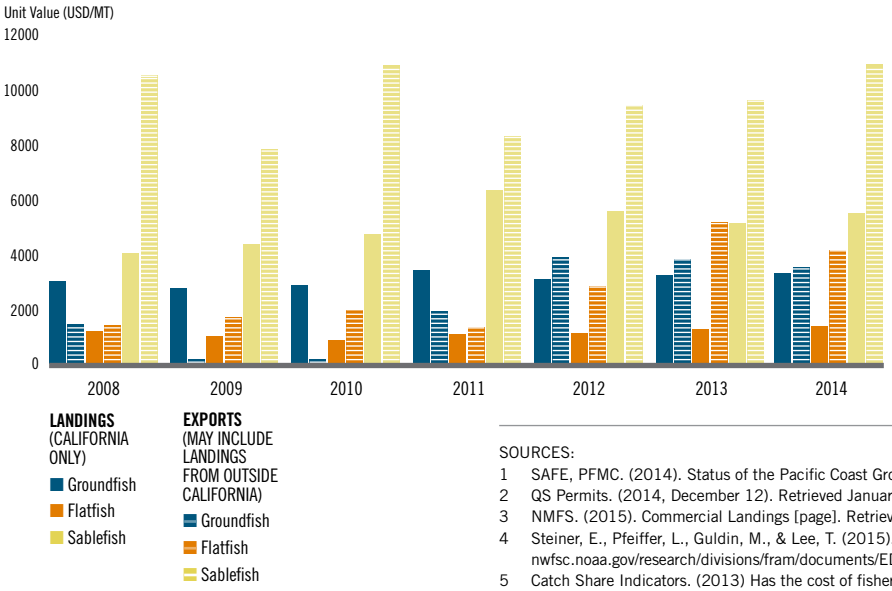
NEED TO IMPROVE END-MARKET KNOWLEDGE

The U.S. trend of exporting local fish and importing cheaper substitutes seems to hold in this market given the import and export amounts for California ports. From 2008–2014, sablefish landed by fixed gears and exported to Japan drove the majority of the value in the export market. Groundfish landed by trawlers averaged 1/5 of the landings value of that landed by fixed gear.

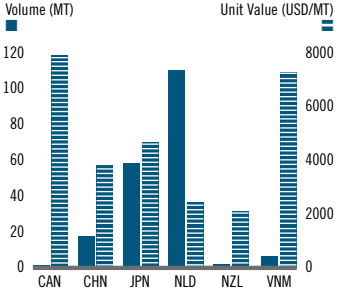
Other than export data, there is limited data on the other channels of distribution for West Coast, California groundfish. The relevance and opportunities related to high value domestic channels for these species remain unclear. **EQUALLY UNCLEAR IS VOLUME AND VALUE DATA RELATED TO WASTE STREAMS AND DISCARD UTILIZATION**.

SNAPSHOT OF UNIT VALUES BY CATEGORY: COMPARISON OF LANDINGS TO EXPORTS[10]

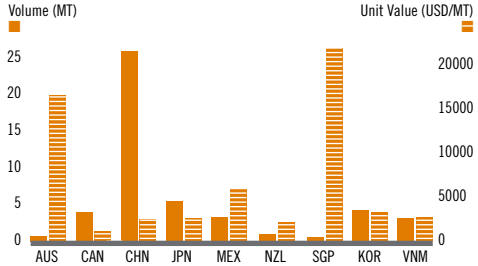
Unit values were calculated by dividing value by volume for groundfish landings in California as reported by PacFin and exports labelled as groundfish, flatfish and sablefish (excluding cod, whiting, haddock, hake, pacific halibut and pollock) exported from California, as reported to NMFS by the Foreign Trade Division of the U.S. Census Bureau. These exports may not have been landed in California.



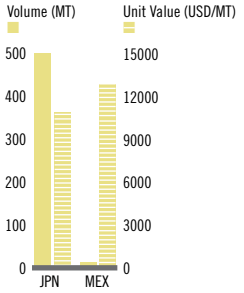
2014 LANDINGS V EXPORTS: GROUNDFISH



2014 LANDINGS V EXPORTS: FLATFISH



2014 LANDINGS V EXPORTS: SABLEFISH



DIFFICULTY FINANCING A LONG-TERM BUSINESS VISION

- Of the 6 impact/alternative investors interviewed, none are currently seeking to place equity in this market.
- Harvesters have access to credit as long as balance sheet health is good—but loans are considered too expensive, so harvesters are not seeking financing.
- Lending against business cash flows and available assets is possible though limited to organizations such as the California Fisheries Fund (CFF) as well as the Farm Credit group.
- With the exception of CFF, no lenders are willing to lend exclusively against quota in California due to concern related to the lack of a history of comparable transactions and the lack of a mechanism to track liens.

SOURCES:
1 SAFE, PFMC. (2014). Status of the Pacific Coast Groundfish Fishery: Stock Assessment and Fishery Evaluation (p. 280). Retrieved from http://www.pcouncil.org/wp-content/uploads/SAFE_Dec2014_v12.pdf
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6 CapLog. (2012). Economic Model and Summary of Monitoring Concepts for the West Coast groundfish IFQ Program. Retrieved from http://www.morrobaycommunityquotafund.org/wp-content/uploads/2012/11/white-paper-on-monitoring.pdf
7 NMFS. (2015). Commercial Landings [page]. Retrieved February 10, 2015, from http://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/index
8 NMFS. (n.d.). Trade by Country [page]. Retrieved February 18, 2015, from http://www.st.nmfs.noaa.gov/commercial-fisheries/foreign-trade/applications/trade-by-country
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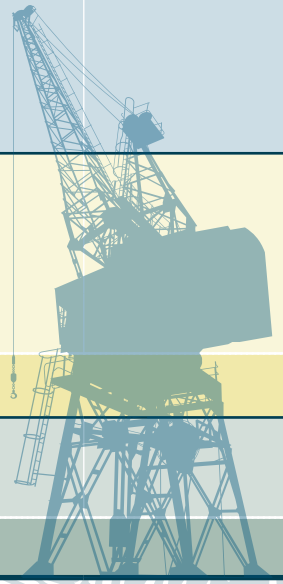
10 PacFIN. (2015). Pacific Fisheries Information Network. Retrieved November 20, 2015, from https://reports.psmfc.org/pacfin/f?p=501:1000:; NMFS. (n.d.). Trade by Country [page]. Retrieved February 18, 2015, from http://www.st.nmfs.noaa.gov/commercial-fisheries/foreign-trade/applications/trade-by-country

West Coast Groundfish in California Summary Recommendations

	Investors and Philanthropies	Management	Harvesters	Processors and Distributors	End Markets
Sea		**Address Allocation Issues** **Address Management Costs**			
Shore	**Assess Infrastructure Access**		**Support Infrastructure Access**		
	Quota Lease and Lienholder Registration Mechanism				
	Encourage Additional First Receiver Site Licensees				
Market	**Assess End Market**		**Support End Market Assessments**		
	Improve Market Acceptance of Frozen Products				



For Management

At Sea

ADDRESS ALLOCATION ISSUES

Align Timing of Allocation to Fish Availability: We identified several examples of misalignment between natural fishing seasons and when allocations are provided. As an example, NMFS does not allocate all quota until April. However, the prime harvest period for petrale sole runs until April. This means harvesters do not know their allocation and are unable to buy, sell or even fish quota until after the season ends and there are fewer fish to be fished.

Reduce Uncertainty of Allocation: Harvesters are unsure how quota allocation values will change as a result of the proposed cap requirements deadline in 2015 and the proposed Adaptive Management Plan that will be allocated in 2017. This uncertainty makes determining quota value difficult, and as a result planning how much to invest in quota becomes more of a gamble.

Assess the Economic Viability of Individual Caps: Information regarding species caps for individual harvesters raise concern from numerous value chain participants about the ability of the harvester to remain profitable. We recommend an analysis of how best to improve information flows related to individual species caps in place for harvesters. The upcoming 5-year review in 2016 would be an appropriate time to complete this analysis.

Assess Sablefish as a Choke Species. Recent localized reports indicate the potential of depleted sablefish populations due to its aggregation with other important species such as Dover sole and thornyheads. Combined with its ability to be targeted by a range of gear types (trawl and fixed gear), minimal processing requirements and market popularity, there is a developing risk that sablefish will act as a choke species in targeting other economically viable species. Rapidly assessing whether or not this is an issue and identifying measures to address it through improved monitoring, or fishing practices, or both will help to ensure it does not restrict access to Dover sole and thornyheads.

ADDRESS FISHERY MANAGEMENT COSTS

Encouraging and Supporting Efforts to Reduce the Costs. Reducing costs associated with managing the IFQ fishery given the objective of improving harvester economic outcomes is important. Reducing the high costs of on-board monitoring (potentially through the use of electronic monitoring or other technology), and implementing the agreed reduction in the cost recovery fee and vessel buyback scheme (as a range of stakeholders recently facilitated) will positively impact the harvester's bottom line.

At Shore

Support Development of Quota Lease and Lienholder Registration Mechanisms. A registry of quota holders, transaction records and lienholders would provide greater transparency, and reduce the risks associated with lending against quota. This would facilitate the attraction of additional capital to this market and potentially reduce the amount of harvesters' personal equity, like their homes, required to participate in the fishery.

The long-term goal is to link a robust economic recovery to the biological recovery.

For Investors and Philanthropists

At Shore

Support Development of Quota Lease and Lienholder Registration Mechanisms. A registry of quota holders, transaction records and lienholders would provide greater transparency, and reduce the risks associated with lending against quota, thus facilitating the attraction of additional capital to this market and potentially reduce the amount of harvesters' equity required to participate in the fishery.

ASSESS INFRASTRUCTURE ACCESS

Support a Port Infrastructure Assessment. Beyond an inventory, we recommend that this assessment review the business model and economic relationships between local jurisdictions, management authorities and shoreside port facility operators with an ultimate objective of facilitating transactions that maximize the economic value of the fishery for IFQ harvesters.

Support Development of Economic and Financial Models for the Trawl Industry. Wharf space, hoist access, ice facilities, processing, distribution, access to transportation and access to waste and byproduct processors are all important to the trawl industry. Facilitating models that support the growth and development of shoreside services through partnerships with city and county level governments or interest groups would unblock a constraint at some ports.

At Market

ASSESS END MARKETS

Support and Undertake an End Market Demand Assessment in Order to:

- Better understand market demand (export vs. domestic) by product form (fresh frozen, filet, etc.) and channel (harvest method, intermediary and buyer) for sustainably harvested California groundfish in order to document the feasibility of developing this market.
- Better understand how to differentiate domestic, sustainably sourced product from imports.

Based upon the outcome of an end market assessment, all value chain participants will be able to develop appropriate strategies to evaluate investment options in order to improve product value for the full range of harvested species.

This information will also be useful to a variety of funders—philanthropic as well as return seeking—in order to assess the viability of investment opportunities in this fishery. Lacking this information, the value chain stakeholders may either invest their time and money in efforts to reach a target market that has little demand for their respective product, or may decide to continue business as usual, which may ultimately lead to harvesters leaving the IFQ fishery.

For Harvesters

At Shore

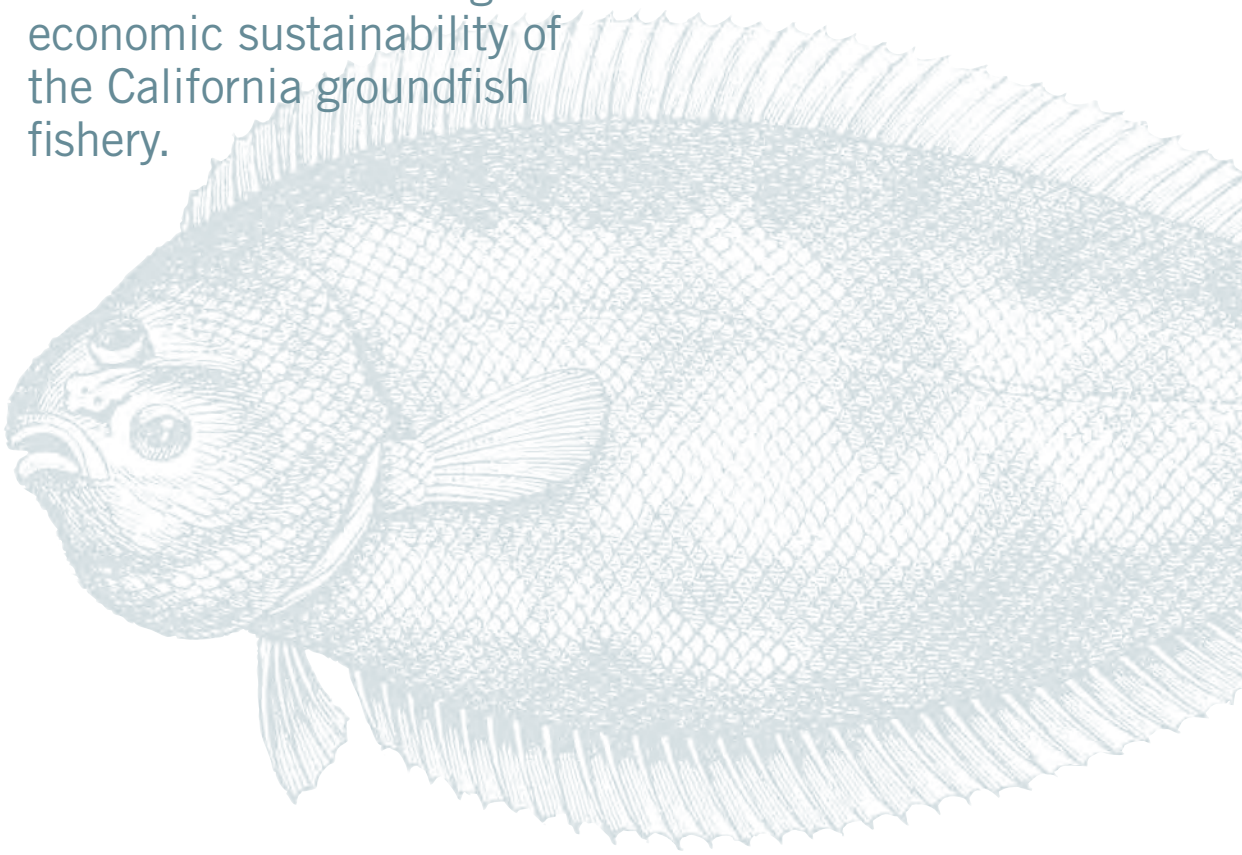
Support Development of Quota Lease and Lienholder Registration Mechanisms. A registry of quota holders, transaction records and lienholders would provide greater transparency, and reduce the risks associated with lending against quota, thus facilitating the attraction of additional capital to this market and reduce the amount of harvesters' personal equity required to participate in the fishery.

Secure First Receiver Site Licenses (FRSL). A requirement of the IFQ fishery, securing access to these licenses by individual boats or associations of IFQ harvesters is one key to providing equitable access to different markets and diversifying marketing options.

Support Infrastructure Assessments. This is the first step to evaluating port-by-port infrastructure needs based on market requirements (see recommendations for Investors and Philanthropies).

Support End Market Demand Research. This will help ensure business and investment decisions are based on market requirements (see recommendations for Investors and Philanthropies).

Understanding and influencing market demand are critical for the long-term economic sustainability of the California groundfish fishery.



For All Segments

At Sea | At Shore | At Market

IMPROVE MARKET ACCEPTANCE OF FROZEN PRODUCTS

Build Demand for Frozen vs. Fresh Product. All value chain participants would benefit from encouraging market demand for frozen vs. fresh product. Not only would this allow the supply chain to absorb larger volumes of fish, it would allow the market to absorb seasonal harvesting pulses at prices and levels of quality that are more favorable to all stakeholders. Higher values for frozen sablefish exports to Japan are a promising sign.

ENCOURAGE ADDITIONAL FRSL

Support Access and Acquisition of Additional FRSL. A requirement of the IFQ fishery, equitable access to FRSLs is a key requirement to accessing different markets. In some high volume ports such as Eureka, trawl operators are limited to two FRSL options—both held by processing firms. Some harvesters, particularly those trading in higher value species, have secured their own FRSL. Others should be encouraged to do so. It was not clear why more fishermen or groundfish associations have not taken this route, although it is believed to be due to a lack of processing knowledge, a lack of access to suitable infrastructure and out of loyalty to existing processors and buyers.

SUCCESS STORY: MORRO BAY CSP[4]

In May of 2012, the National Fish and Wildlife Foundation awarded the City of Morro Bay a grant to develop Community Sustainability Plans (CSPs) for the City of Morro Bay and the City of Monterey. Community leaders embraced the project, seeing it as an opportunity to assess current baseline conditions and plan strategically for a stable and vibrant fishing industry and waterfront infrastructure.

The resulting Morro Bay CSP assesses critical infrastructure and services, quantifies the number of jobs generated by the fishing industry, addresses synergies with tourism, aquaculture and recreational fishing, and distinguishes fishing's prominent role in Morro Bay's cultural identity and marine stewardship—all of which are factors in developing long-term, economically sustainable fisheries.

With input from the fishing community and local civic leaders, the Morro Bay CSP culminates with recommendations aimed at the implementation of projects with greatest priority and potential economic, environmental and social return. With this well-researched document in place, this community is poised for economic success, while maintaining biological sustainability.

4 Lisa Wise Consulting. (April 2014). *City of Morro Bay Fishing Community Sustainability Plan*. Retrieved February 2015, from http://www.smharbor.com/harbordistrict/packets/03182015_8a2.pdf

About Us

Wilderness Markets is working with a range of philanthropic and impact investors to assess sustainable seafood markets in order to facilitate the development of conservation focused impact investment opportunities in fisheries globally.

With the support of the David and Lucile Packard Foundation and the Gordon and Betty Moore Foundation, we have had the opportunity to assess four fisheries in Developing Country Fisheries (DCFs) and two U.S. fisheries in order to identify and assess the constraints preventing impact capital from accessing this market. At the same time, we identified potential investment opportunities within these fishery value chains.

Our work over the past two years has taken us through the New England groundfish fishery (U.S), a multi-species value chain in Baja California, Indonesia's value chains for yellowfin and skipjack tuna, blue swimming crab, and red snapper and the West Coast groundfish value chain in California (U.S). These fisheries were assessed against a common set of frameworks in order to maintain consistency, with an overall focus on development and improved economic outcomes for harvesters.

Wilderness Markets clients include the David and Lucile Packard Foundation, the Gordon and Betty Moore Foundation, the Environmental Defense Fund, The World Bank Group and others.

Learn more about us www.wildernessmarkets.com

About Our Funders

THE DAVID AND LUCILE PACKARD FOUNDATION

For more than 50 years, the David and Lucile Packard Foundation has worked with partners around the world to improve the lives of children, families, and communities—and to restore and protect our planet.

THE GORDON AND BETTY MOORE FOUNDATION

The Gordon and Betty Moore Foundation fosters path-breaking scientific discovery, environmental conservation, patient care improvements and preservation of the special character of the Bay Area. Visit www.moore.org or follow @MooreFound.

Acknowledgements

U.S. WEST COAST

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- **Harvesters:** Bob Dooley, David Crabbe, Gino (Joey) Pennisi, Giovanni Comin, Geoff Bettencourt, Richard Deyerle, and Rob and Tiffani Seitz
- **Associations:** Lisa Damrosch, Half Moon Bay Groundfish Marketing Association; Michelle Norvell, Fort Bragg Groundfish Association; Sherry Flumerfelt, Monterey Bay Fisheries Trust; Paul Parker, Cape Cod Fishermans Alliance
- **Financial organizations:** Evan Herriot, Northwest Farm Credit Services; Jeff Osborn, Dock Street Brokers; Phoebe Higgins, California Fisheries Fund; Mike Dickerson, Craft 3
- **Processors, distributors, and retailers:** Alan Lovewell, Local Catch Monterey; Howard Johnson, H.M. Johnson & Associates; Michael Lucas, North Coast Fisheries; Norah Eddy, Salty Girls Seafood; Guy Dean, Albion Fisheries
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- **Consultants:** Henry Pontarelli, Lisa Wise Consulting; Huff McGonigal, Fathom Consulting; Hank Hansen, Urner Barry; Monica Jain, Manta Consulting